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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/719,397	12/12/2000	Hideyo Uwabata	001557	7818

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EXAMINER


TRAN, TRANG U

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 04/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/719,397	Applicant(s) UWABATA ET AL.	
	Examiner Trang U. Tran	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-19,21-24 and 27-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 3-19,21-24 and 27-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4, 5</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 22 and 23-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Hackett et al (US Patent No. 5,396,157).

In considering claim 22, Hackett et al discloses all the claimed subject matter, note 1) the claimed a movement control circuit for producing a movement control signal for controlling the movement in the vertical direction of the scanning lines such that a part of the scanning line having a luminance which is not less than a predetermined value in a luminance change portion in the vertical direction on the basis of a luminance signal moves farther apart from a part of the adjacent scanning line having a lower luminance than said predetermined value is met by the logic circuit 53 which output the control signal C directed to the deflection circuit 56 (Figs. 4-6, col. 2, line 25 to col. 3, line 7), 2) the claimed a vertical velocity modulation coil for generating a magnetic field for modulating the scanning speed in the vertical direction of the electron beam on the basis of the movement control signal produced by said movement control circuit is met by the vertical deflection coil 57 (Fig. 5, col. 2, lines 35-56), and 3) the claimed wherein said movement control circuit outputs the distance of movement on the screen of

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a part of the scanning line to be an object as said movement control signal on the basis of the difference between the luminance of a part of the scanning line a predetermined number of horizontal scanning periods ahead of and the luminance of a part of the scanning line the predetermined number of horizontal scanning periods behind the part of the scanning line to be the object and the level of the luminance of the part of the scanning line to be the object is met by the vertical cross-section (Fig. 4, col. 2, line 25 to col. 3, line 7).

Claim 23 is rejected for the same reason as discussed in claim 22 and further the claimed a frequency domain emphasis circuit for emphasizing a predetermined frequency domain of said movement control signal produced by said movement control circuit is met by the vertical cross-section (Fig. 6, col. 2, line 25 to col. 3, line 7).

In considering claim 24, the claimed wherein said frequency domain emphasis circuit comprises an extraction circuit for extracting said predetermined frequency domain of said movement control signal produced by said movement control circuit is met by the logic circuit 53 which output the control signal C directed to the deflection circuit 56 (Figs. 4-6, col. 2, line 25 to col. 3, line 7), and an adder for adding said movement control signal produced by said movement control circuit and the signal in said frequency domain extracted by said extraction circuit is met by the amplifier 54 (Fig. 5, col. 2, lines 49-56).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-4, 6-15, 18-19, 21 and 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hackett et al (US Patent No. 5,396,157) in view of Watabe Junzo et al (JP Publication No. 06-284309).

In considering claim 3, Hackett et al discloses all the claimed subject matter, note 1) the claimed a vertical deflection circuit for deflecting said electron beam in the vertical direction is met by the vertical deflection circuit 56 (Fig. 5, col. 2, lines 35-56), 2) the claimed a vertical velocity modulation circuit for modulating the scanning speed in the vertical direction of an electron beam for successively forming scanning lines in the horizontal direction on a screen is met by the circuit of Fig. 5 (Figs. 4-6, col. 2, line 25 to col. 3, line 7), 3) the claimed wherein said vertical velocity modulation circuit comprises a parallel scanning circuit for outputting a parallel scanning signal for making the forward and backward scanning lines formed by said horizontal deflection circuit parallel is met by the first line delay circuit 511 and the second line delay circuit 512 (Fig. 5, col. 2, lines 35-44), 4) the claimed a movement control circuit for producing a movement control signal for controlling the movement in the vertical direction of the scanning lines such that a part of the scanning line having a luminance which is not less than a predetermined value in a luminance change portion in the vertical direction on the basis of a luminance signal moves farther apart from a part of the adjacent scanning line having a lower luminance than said

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predetermined value is met by the logic circuit 53 which output the control signal C directed to the deflection circuit 56 (Figs. 4-6, col. 2, line 25 to col. 3, line 7), 5) the claimed a synthesizing circuit for synthesizing the parallel scanning signal outputted by said parallel scanning circuit and the movement control signal produced by said movement control circuit is met by the logic circuit 53 which output the control signal C directed to the deflection circuit 56 (Figs. 4-6, col. 2, line 25 to col. 3, line 7), and 6) the claimed a vertical velocity modulation coil for generating a magnetic field for modulating the scanning speed in the vertical direction of the electron beam on the basis of a signal synthesized by said synthesizing circuit is met by the vertical deflection coil 57 (Fig. 5, col. 2, lines 35-56).

However, Hackett et al explicitly does not discloses the claimed a horizontal beam back and forth in the horizontal direction to form forward and backward scanning lines in the horizontal direction on a screen.

Watabe Junzo et al teach that a monitoring device 1 drives the vertical deflection coil 6 by the vertical deflection circuit 5, and, thereby, forms the display screen with the application of the technique of a bi-directional deviation while it drives the horizontal deflection coil 4 by the bi-directional deflection circuit 3 (Fig. 1, page 4, [0018-0020]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the horizontal bi-directional deflection circuit as taught by Watabe Junzo et al into Hackett et al's system in order to improve the quality of the picture by switching the polarity of a modulation

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magnetic field according to a back-and-forth path to modulate a speed according to bi-directional deflection.

In considering claim 4, the claimed wherein said movement control circuit comprises a change portion detection circuit for detecting a luminance change portion in the vertical direction on the basis of the luminance signal, a movement distance output circuit for outputting as said movement control signal the distance of movement of the scanning line on the screen in the vertical direction in the luminance change portion detected by said change portion detection circuit on the basis of the luminance signal is met by the circuit of Fig. 5 (Figs. 4-6, col. 2, line 25 to col. 3, line 7) of Hackett et al, and the claimed a time axis reversion circuit for reversing the time axis of the movement control signal outputted by said movement distance output circuit in backward scanning by said horizontal deflection circuit is met by the time-axis inverter circuit 7 (Fig. 2, page 4, [0021] to page 5, [0023]) of Watabe Junzo et al.

In considering claim 6, the claimed wherein said vertical velocity modulation circuit further comprises an amplifier for amplifying the signal synthesized by said synthesizing circuit is met by, and a gain control circuit for controlling the gain of said amplifier is met by the amplifier 54 (Fig. 5, col. 2, lines 49-56).

In considering claim 7, the claimed wherein said gain control circuit controls the gain of said amplifier on the basis of the number of the scanning lines formed on the screen by said horizontal deflection circuit is met by the control signal C (Fig. 5, col. 2, lines 49-56) of Hackett et al.

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In considering claim 8, the claimed wherein said gain control circuit controls the gain of said amplifier depending on the positions of the scanning lines formed on the screen by said horizontal deflection circuit is met by the control signal C (Fig. 5, col. 2, lines 49-56) of Hackett et al.

Claim 9 is rejected for the same reason as discussed in claim 3 and further the claimed wherein said vertical velocity modulation circuit comprises a movement distance: output circuit for outputting the distance of movement on the screen of a part of the scanning line to be an object as the movement control signal on the basis of the difference between the luminance of a part of the scanning line a predetermined number of horizontal scanning periods ahead of and the luminance of a part of the scanning line the predetermined number of horizontal scanning periods behind the part of the scanning line to be the object and the level of the luminance of the part of the scanning line to be the object such that a part of the scanning line having a luminance which is not less than a predetermined value in a luminance change portion in the vertical direction moves farther apart from a part of the adjacent scanning line having a lower luminance than said predetermined value is met by the vertical cross-section (Fig. 4, col. 2, line 25 to col. 3, line 7) of Hackett et al.

In considering claim 10, Hackett et al discloses all the claimed subject matter, note 1) the claimed wherein said movement distance output circuit comprises a difference calculation circuit for calculating the difference between the luminance of the part of the scanning line the predetermined number of horizontal scanning periods ahead of and the luminance of the part of the

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scanning line the predetermined number of horizontal scanning periods behind the part of the scanning line to be the object is met by the vertical cross-section (Fig. 4, col. 2, line 25 to col. 3, line 7) of Hackett et al, 2) the claimed a first signal output circuit for outputting a first movement distance signal on the basis of an output signal of said difference calculation circuit is met by the first line delay 511 (Fig. 5, col. 2, lines 35-56), 3) the claimed a second signal output circuit for outputting a second movement distance signal on the basis of the luminance of the part of the scanning line to be the object is met by the second line delay 512 (Fig. 5, col. 2, lines 35-56), and 4) the claimed a multiplication circuit for multiplying the first movement distance signal outputted from said first signal output circuit and the second movement distance signal outputted from said second signal output circuit together, and outputting the result of the multiplication as said movement control signal is met by the multiplier 54 (Fig. 5, col. 2, lines 35-56).

In considering claim 11, the claimed wherein said first signal output circuit sets the value of said first movement distance signal to zero when the value of the output signal of said difference calculation circuit is smaller than a predetermined value, and said second signal output circuit sets the value of said second movement distance signal to zero when the luminance of the part of said scanning line to be the object is smaller than the predetermined value is met by the first comparator 521, the second comparator 522 and the logic circuit 53 (Fig. 5, col. 2, line 35 to col. 3, line 7) of Hackett et al.

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In considering claim 12, the claimed wherein the scanning line said predetermined number of horizontal scanning periods ahead of the part of the scanning line to be the object is the scanning line two horizontal scanning periods ahead of the part of the scanning line to be the object, and the scanning line said predetermined number of horizontal scanning periods behind the part of the scanning line to be the object is the scanning line two horizontal scanning periods behind the part of the scanning line to be the object is met by the vertical cross-section (Fig. 4, col. 2, line 25 to col. 3, line 7) of Hackett et al.

In considering claim 13, the claimed wherein the scanning line said predetermined number of horizontal scanning periods ahead of the part of the scanning line to be the object is the scanning line one horizontal scanning period ahead of the part of the scanning line to be the object, and the scanning line said predetermined number of horizontal scanning periods behind the part of the scanning line to be the object is the scanning line one horizontal scanning period behind the part of the scanning line to be the object is met by the vertical cross-section (Fig. 4, col. 2, line 25 to col. 3, line 7) of Hackett et al.

In considering claim 14, the claimed wherein said vertical velocity modulation circuit further comprises a movement distance limitation circuit for limiting the distance of movement on the screen of the part of the scanning line such that the positions of the adjacent scanning lines are not replaced with each other by the movement of the part of the scanning line is met by the circuit of Fig. 5 (Figs. 4-6, col. 2, line 25 to col. 3, line 7) of Hackett et al.

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In considering claim 15, the claimed wherein said movement distance limitation circuit limits the movement control signal outputted from said movement distance output circuit to half when the luminance of the part of the scanning line to be the object and the luminance of the part of the scanning line two horizontal scanning periods behind the part of the scanning line to be the object are not less than the predetermined value, and the luminance of the part of the scanning line two horizontal scanning periods ahead of, the luminance of the part of the scanning line three horizontal scanning periods ahead of, and the luminance of the part of the scanning line three horizontal scanning periods behind the part of said scanning line to be the object are less than the predetermined value, or when the luminance of the part of the scanning line to be the object and the luminance of the part of the scanning line two horizontal scanning periods ahead of the part of said scanning line to be the object are not less than the predetermined value, and the luminance of the part of the scanning line two horizontal scanning periods behind, the luminance of the part of the scanning line three horizontal scanning periods behind, and the luminance of the part of the scanning line three horizontal scanning periods ahead of the part of said scanning line to be the object are less than the predetermined value is met by the vertical cross-section (Fig. 4, col. 2, line 25 to col. 3, line 7) of Hackett et al.

Claim 18 is rejected for the same reason as discussed in claim 3 and further the claimed a frequency domain emphasis circuit for emphasizing a predetermined frequency domain of said movement control signal produced by

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said movement control circuit is met by the vertical cross-section (Fig. 6, col. 2, line 25 to col. 3, line 7) of Hackett et al.

In considering claim 19, Hackett et al discloses all the claimed subject matter, note 1) the claimed wherein said frequency domain emphasis circuit comprises an extraction circuit for extracting said predetermined frequency domain of said movement control signal produced by said movement control circuit is met by the logic circuit 53 which output the control signal C directed to the deflection circuit 56 (Figs. 4-6, col. 2, line 25 to col. 3, line 7), and 2) the claimed an adder for adding said movement control signal produced by said movement control circuit and the signal in said frequency domain extracted by said extraction circuit together is met by the amplifier 54 (Fig. 5, col. 2, lines 49-56).

Claim 21 is rejected for the same as reason as discussed in claim 3.

Claims 27-29 are rejected for the same as reason as discussed in claims 3-5, respectively.

Claim 30 is rejected for the same as reason as discussed in claims 3 and 9.

Claim 31 is rejected for the same as reason as discussed in claims 3 and 18.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hackett et al (US Patent No. 5,396,157) in view of Watabe Junzo et al (JP Publication No. 06-284309).

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In considering claim 5, the combination of Hackett et al and Watabe Junzo et al disclose all the limitations of the instant invention as discussed in claim 3 above, except for providing the claimed wherein said vertical velocity modulation circuit further comprises a clamping circuit for clamping the movement control signal produced by said movement control circuit to a predetermined potential at predetermined timing. The capability of a clamping circuit for clamping the movement control signal is old and well known in the art. Therefore, the Official Notice is taken. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the old and well known clamping circuit into the combination of Hackett et al and Watabe Junzo et al's system in order to improve the quality of the video signal by clamping the video signal to appropriate level.

6. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watabe Junzo et al (JP Publication No. 06-284309) in view of Hackett et al (US Patent No. 5,396,157).

In considering claim 16 Watabe Junzo et al discloses all the claimed subject matter, note 1) the claimed a horizontal deflection circuit for deflecting an electron beam in the horizontal direction to form scanning lines in the horizontal direction on a screen is met by the bi-directional deflection circuit 3 (Fig. 1, page 4, [0018-0020]), 2) the claimed a vertical deflection circuit for deflecting said electron beam in the vertical direction is met by the vertical deflection circuit 5 (Fig. 1, page 4, [0018-0021]), 3) the claimed a cathode ray tube is met by the cathode ray tube 2 (Fig. 1, page 4, [0018-0021]), 4) the claimed an electron gun

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an electron gun provided in said cathode ray tube and having a metal case, said vertical velocity modulation circuit comprising a movement control circuit for producing a movement control signal for controlling the movement in the vertical direction of the scanning lines on the basis of the luminance signal is met by the velocity modulation means (Fig. 1, page 4, [0015] – [0021]), and 5) the claimed a vertical velocity modulation coil disposed in a position departing from the periphery of said metal case of said electron gun and around said cathode ray tube for generating a magnetic field for modulating the scanning speed in the vertical direction of the electron beam on the basis of said movement control signal produced by said movement control circuit is met by the velocity modulation coil 4, 6 and 10 (Fig. 1, page 3, [0007] and page 4, [0015] – [0021]).

However, Watabe Junzo et al explicitly does not disclose the claimed a vertical velocity modulation circuit for modulating the scanning speed in the vertical direction of the electron beam such that a part of the scanning line having a luminance which is not less than a predetermined value in a luminance change portion in the vertical direction moves farther apart from a part of the adjacent scanning line having a lower luminance than said predetermined value.

Hackett et al teach that an improvement in the apparent sharpness of a vertical transition may be gained by modifying the vertical deflection of a TV receiver such that, at vertical transitions, the line on the bright side of the transition is deflected away from the transition region as show in Fig. 3 (Figs. 4-6, col. 1, lines 47-60 and col. 2, line 25 to col. 3, line 7).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a vertical transition may be gained by modifying the vertical deflection of a TV receiver such that, at vertical transitions, the line on the bright side of the transition is deflected away from the transition region as taught by Hackett et al into Watabe Junzo et al's system in order to improve vertical sharpness of image displayed on picture tubes.

In considering claim 17, the claimed further comprising a deflection yoke disposed in the position departing from the periphery of said metal case of said electron gun and around said cathode ray tube, and constituting said horizontal deflection circuit and said vertical deflection circuit, said vertical velocity modulation coil being arranged inside said deflection yoke is met by the cathode ray tube 2 (Fig. 1, page 4, [0018-0021]) of Watabe Junzo et al.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Okumura et al (US Patent No. 6,529,176 B1) disclose image display and horizontal speed modulator.

Hanai (US Patent No. 5,912,715) discloses scanning speed modulating circuit and method.

Priere et al (US Patent No. 5,223,769) disclose scan velocity modulation apparatus.

Yoshino (US Patent No. 5,592,230) discloses high definition television receiver.

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Washino (US Patent No. 5,351,094) discloses television receiver with scan velocity modulation being adjusted according to aspect ratio.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Trang U. Tran** whose telephone number is **(703) 305-0090**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **John W. Miller**, can be reached at **(703) 305-4795**.

Any response to this action should be mailed to:

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or faxed to:

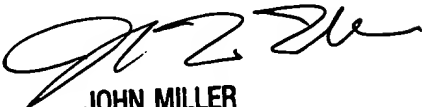
(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121

Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

TT TT
April 19, 2003


JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600